APPENDIX B
PENDING CLAIMS

1. (Twice amended) A mutant antibody comprising a reactive site not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that recognize a metal chelate or portions thereof, wherein said reactive site is in a position proximate to or within said complementarity-determining regions,

wherein said reactive site is the mutation and,

wherein said reactive site interacts with a reactive group selected from carboxyl groups, hydroxyl groups, haloalkyl groups, dienophile groups, aldehyde groups, ketone groups, sulfonyl halide groups, thiol groups, amine groups, sulfhydryl groups, alkene groups, and epoxide groups.

2. The mutant antibody according to claim 1, wherein said reactive site is a side-chain of a naturally occurring or non-naturally occurring amino acid.

3. The mutant antibody according to claim 2, wherein said reactive site is the –SH group of cysteine.

10. (Once amended) A polypeptide comprising a peptide sequence according to SEQ. ID NO.:5 (FIG. 12).

11. A polypeptide comprising a peptide sequence according to SEQ. ID NO.: 7 (FIG. 14).

14. (Twice amended) The mutant antibody according to claim 1, wherein said mutant antibody is a mutant of the antibody deposited as ATCC Deposit No. PTA-4696.

15. The mutant antibody according to claim 14, wherein serine-95 of the light-chain is substituted by a cysteine residue.

16. The mutant antibody according to claim 1, wherein said antibody is a bifunctional antibody further comprising a second complementarity-determining region that specifically binds to a cell-surface antigen.

17. The mutant antibody according to claim 1, further comprising a targeting moiety covalently attached thereto.

18. The mutant antibody according to claim 17, having the structure:

Ab-L-T

wherein,

Ab represents said antibody;

L is a chemical bond or linking group; and

T is said targeting moiety.

19. The mutant antibody according to claim 17, wherein said targeting moiety is an antibody that binds specifically to a cell surface antigen.

20. The mutant antibody according to claim 1, further comprising said metal chelate bound to said complementarity-determining region, wherein said chelate comprises a reactive functional group of complementary reactivity to said reactive site of said antibody.

21. (Once amended) The mutant antibody according to claim 20, further comprising a covalent bond formed by reaction of said reactive site of said antibody and said reactive functional group of said chelate.

22. (Once amended) The mutant antibody according to claim 20, wherein said reactive group of said chelate is an acrylamido moiety.

23. The mutant antibody according to claim 1, wherein said metal chelate is a polyaminocarboxylate chelate of a metal ion selected from the group consisting of transition metal ions and lanthanide ions.

24. A pharmaceutical composition comprising the mutant antibody according to claim 17, and a pharmaceutically acceptable carrier.

25. (Twice amended) A mutant antibody comprising a cysteine residue not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that recognize a metal chelate or portions thereof, wherein said cysteine is in a position proximate to or within said complementarity-determining regions, wherein said cysteine residue is the mutation.

30. The antibody according to claim 25, wherein said antibody is a bifunctional antibody further comprising a second complementarity-determining region that specifically binds to a cell-surface antigen.

31. The mutant antibody according to claim 25, further comprising a targeting moiety covalently attached thereto.

32. The mutant antibody according to claim 31, having the structure:

Ab-L-T

wherein,

Ab represents said antibody;

L is a chemical bond or linking group that may contain one or more functional groups; and

T is said targeting moiety

33. The mutant antibody according to claim 31, wherein said targeting moiety is a member selected from the group consisting of antibodies and antibody fragments, each of which bind specifically to a cell surface antigen.

34. The mutant antibody according to claim 25, further comprising said metal chelate bound to said complementarity-determining region, wherein said chelate comprises a reactive functional group of complementary reactivity to the –SH side-chain of said cysteine residue.

35. The mutant antibody according to claim 34, further comprising a covalent bond formed by reaction of the –SH side-chain of cysteine and said reactive functional group of said chelate.

36. The mutant antibody according to claim 35, wherein said reactive functional group of said chelate is an acrylamido moiety.

37. The mutant antibody according to claim 25, wherein said metal chelate is a polyaminocarboxylate chelate of a metal ion selected from the group consisting of transition metal ions and lanthanide ions.

38. A pharmaceutical composition comprising the mutant antibody according to claim 31, and a pharmaceutically acceptable carrier.

42. (Once amended) A mutant antibody comprising a reactive site not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that specifically bind a metal chelate, wherein said reactive site is in a position proximate to or within said complementarity-determining regions,

wherein said reactive site is the mutation and,

wherein said reactive site interacts with a reactive group selected from carboxyl groups, hydroxyl groups, haloalkyl groups, dienophile groups, aldehyde groups, ketone groups, sulfonyl halide groups, thiol groups, amine groups, sulfhydryl groups, alkene groups, and epoxide groups.

43. (Once amended) A mutant antibody comprising a reactive site not present in the wild-type of said antibody and six complementarity determining regions (CDRs) that recognize a metal chelate comprising a reactive group or portions thereof, wherein said reactive site is in a position proximate to or within said complementarity-determining region,

wherein said reactive group has complementary reactivity to said reactive site of said antibody,

wherein said reactive site is the mutation, and

wherein said reactive group is selected from carboxyl groups, hydroxyl groups, haloalkyl groups, dienophile groups, aldehyde groups, ketone groups, sulfonyl halide groups, thiol groups, amine groups, sulfhydryl groups, alkene groups, and epoxide groups.

44. (New) The mutant antibody according to claim 1, wherein said mutant antibody is a mutant of CHA255.